PROJECT NUMBER: 4017
PROJECT TITLE : Paper Making Processes
PROJECT LEADER : R. M. Rogers
PERIOD COVERED : July, 1991

I. LOW SIDESTREAM SMOKE AND LAB SUPPORT

A. Objective: Develop proprietary cigarette papers for low sidestream smoke.

B. Results: Pilot paper runs are scheduled at Maine for two 35 g/m^2 cigarette papers, with either Omega Fine or Albacar carbonates. The Omega Fine carbonate was obtained from Pfizer as a 10% slurry rather than as a dry powder. Handsheet evaluations indicate that the Omega Fine reduces sheet porosity relative to Albacar carbonate necessitating a higher freeness flax stock to achieve 30 Coresta target. Formation may be a problem at this elevated freeness level.

The freeness/porosity relationship of the three Pfizer carbonates appears to be a function of filler particle size, the smaller the size the lower the porosity at equal freeness. This relationship was not as evident with previous samples of Omega Fine which were obtained as a dry powder. Apparently the slurry form of Omega Fine enhances the carbonate's dispersant characteristics.

C. Plans: Continue supporting the production of pilot quantities of cigarette papers.

Develop the capability to produce 35 g/m^2 papers at Maine.

II. BANDED PAPERS (TOMORROW)

A. Objective: Incorporate cross directional bands of fiber and/or filler in cigarette papers in order to vary cigarette burn rate.

B. Results: Porosity evaluations and chemical tracer analysis (propyl paraben) of banded papers produced at Beloit indicate that insufficient Cellulon was applied to the web. High speed video shots of the banded device indicate that not only was a portion of the Cellulon slurry rejected at the coater, but a portion also remained in the grooves after contact with the sheet. Both actions may have resulted in insufficient Cellulon being applied to the web. A program is being developed to modify slurry rheology and tack characteristics to improve application level.

C. Plans: Develop a program to modify the printing characteristics of Cellulon for use by the rotogravure type unit.

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III. PROPRIETARY FILTER MATERIAL

A. Objective: Develop a proprietary filter material in web form.

B. Results: CA dispersion and softwood refining trials were conducted at James River's Gouverneur tissue mill this month. Refining results were similar to trials conducted at Neenah with the exception of fiber length. Since higher power levels were used to prepare the softwood, the fiber length was lower. Refining conditions can be modified to increase fiber length.

The dispersion characteristics of CA were evaluated in Gouverneur's new 20,000 gallon chest using low shear and low consistency in the presence of a chemical dispersant. CA flock balls were observed in the chest after only 30 minutes of operation. It is hypothesized that the dispersant was stripped from the CA during agitation which permitted the CA to mechanical entangle. Lab evaluations are in progress to determine if the addition of softwood will inhibit the formation of flock balls. If this approach is successfully, an additional CA dispersion trial will be conducted.

A number of web models were produced at James Rivers Neenah research facility this month. PM webs (75% cut CA and 25% refined softwood) with and without dispersant (2% CB-10) were completed. A 75/25 CA/Cellulon web was produced using homogenized Cellulon without crepe since the web failed to adhere to the Yankee. The inclusion of 10% softwood permitted inclusion of crepe (75/15/10 CA/Cellulon/softwood). An 80/20 CA/Fibrids sheet was also produced without crepe due to the web's failure to adhere to the Yankee. A 75/25 CA/cotton sheet was completed with crepe as a subjective option for CA/softwood.

C. Plans: Identify a CA dispersion scenario that will permit production of developmental quantities of PM web at James River's Gouverneur tissue mill.

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